RECENT METROPOLITAN GROWTH IN THE SOUTHERN UNITED STATES

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Recent decades have witnessed a fundamental shift in the character of the southern United States. *(1)* From an agrarian, tradition-bound social and economic regional order focused on the small town and regional market/administrative center, the South has developed into a modern, service and highway oriented, urban-based economic region. *(2)*

An objective of this paper is to examine the locational dimension of recent urban growth in the South and to identify causal factors that underlie this growth. Through an analysis of size, growth rates, and number of cities in the southern region, a case is presented that indicates that although southern urban growth is roughly proportional to city size, size alone is not sufficient to explain fully the patterns that have emerged. *(3)* More elusive factors are also sought and considered, and these are less susceptible to precise measurement and analysis.

Growth, progress, and modernization within a national or regional economic system are likely to reflect a checkered pattern in which locales and regions of rapid progress and normal growth are scattered among areas of stagnation or actual decline. Such patterns are not new and may well reflect adjustments to changing economic and technological conditions and opportunities. Their arrangement on an economic landscape gives rise to what are called key growth centers, nuclei for the spread of economic benefits—ideas, innovations, and wealth—which are diffused throughout the national space economy. *(4)* There are also areas and points of little or no growth. In some cases, regions and places suffer net outmigrations of people with the accompanying severe economic stress. (5)

One of the more cogent explanations of the relationship among city size, spacing, and growth rates of cities in developing economies has asserted that as a space economy associated with economic growth and development becomes more integrated, balanced regional diffusion and a spread of economic benefits will result. *(6)* This spread will be expressed through growth of regional and local urban centers. Over time, a number of nodes and centers will emerge. These centers will grow in a balanced, hierarchical manner, with random exceptions. As growth impulses and benefits spread throughout the state area, growth will occur in proportion to the size of each city. If graphed on two logarithmic scales (population on the vertical axis and rank on the horizontal axis), such a balanced urban hierarchy would appear as a linear, rank-size ordering of urban

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centers. *(7)* Where this benefit/diffusion process fails to occur and economic growth remains concentrated in one large, spatially-eccentric urban center, a condition of primacy results. *(8)* This implies that some new policy or strategy of regional development focused on smaller cities is needed. *(9)*

SOUTHERN PATTERNS OF URBAN DEVELOPMENT. A rank-size pattern is suggested in the growth trends of southern Standard Metropolitan Statistical Areas (SMSAs) (Figure 1). As depicted in the graph,

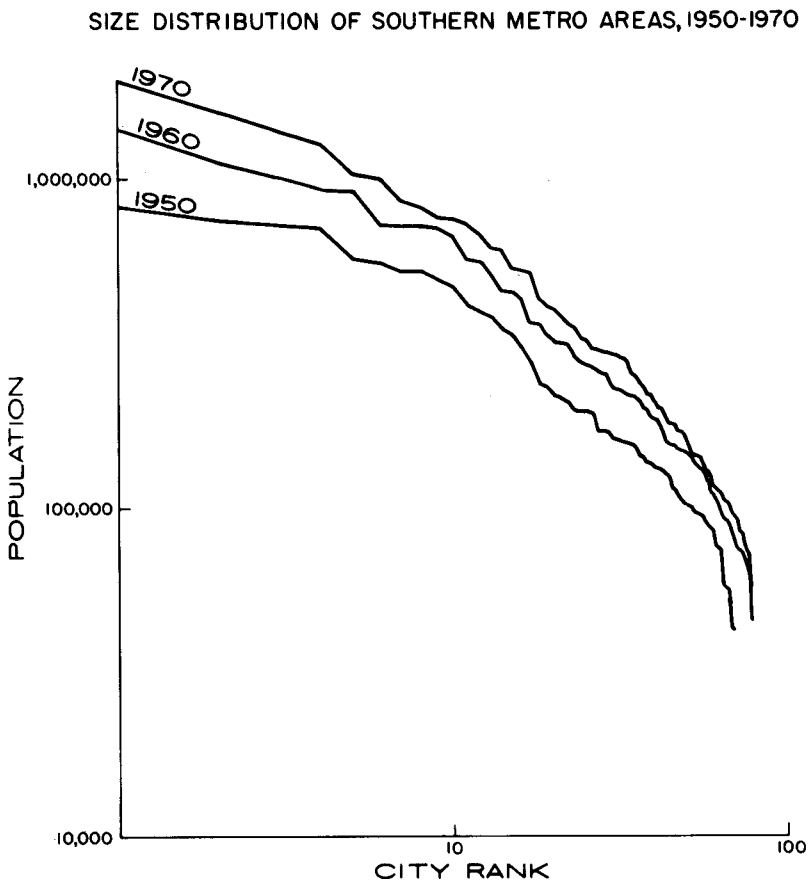

Figure 1

there has been considerable growth at the upper level as the larger cities grow rapidly. Such a trend coincides with Berry's assertion that growth in a city system will tend toward entropy as economic benefits flow throughout the system. On the other hand, there appears to be a threshold among smaller sized cities below which cities grow at less than expected rates, and there appear to be fewer than the expected number of southern SMSAs at the lower end of the rank-size continuum (Figure 1). A cursory visual inspection of the size-distribution graph suggests threshold populations for self-sustaining growth in southern SMSAs. In 1950 this threshold was interpreted to be around 80,000; in 1960 between 125,000 and 150,000, and by 1970, roughly 300,000. *(10)*

All of this seems to suggest a kind of "large-get-larger" pattern. If city size is measured against growth rate for all southern SMSAs for the 1960-70 decennium, the results, although not conclusive, suggest several points (Table 1). Simple linear regression for the relationship

TABLE 1

LINEAR REGRESSION FOR CITY SIZE/GROWTH RATE RELATIONSHIP OF SOUTHERN STANDARD METROPOLITAN STATISTICAL AREAS, 1970

$y = 12.58530 + .00002x$
$r = .3798$
$r^2 = .1442$
std. error $= 14.699$
multiple correlation analysis based on the following
$x_1 =$ 1970 SMSA populations
$x_2 =$ 1960 SMSA populations
$y =$ SMSA 10 year growth rates
$y' = 19.70738 + .00021x_1 - .00026x_2$
multiple correlation coefficient $(r_m) = .7636$
$(r^2_m) = .5831$
partial correlation coefficient $(r_m) = .7636$
$(r_p) = .7161$

Source: Calculations by the author were based on U. S. Census data.

between these two variables, 1970 city size and growth rates as percentages based on the 1960-70 decennium, yielded a Pearson's correlation coefficient of .379. When the regression residuals were standardized, the patterns based on city population related to city growth were inconclusive. Several points of significance did emerge, however. Those large metropolitan areas (over 300,000) that had large, underpredicted residuals (i.e., grew more slowly than expected) either were old or were specialized in industrial activities—New Orleans, Louisville, Memphis, and Birmingham (Figure 2). By contrast, large SMSAs that grew at

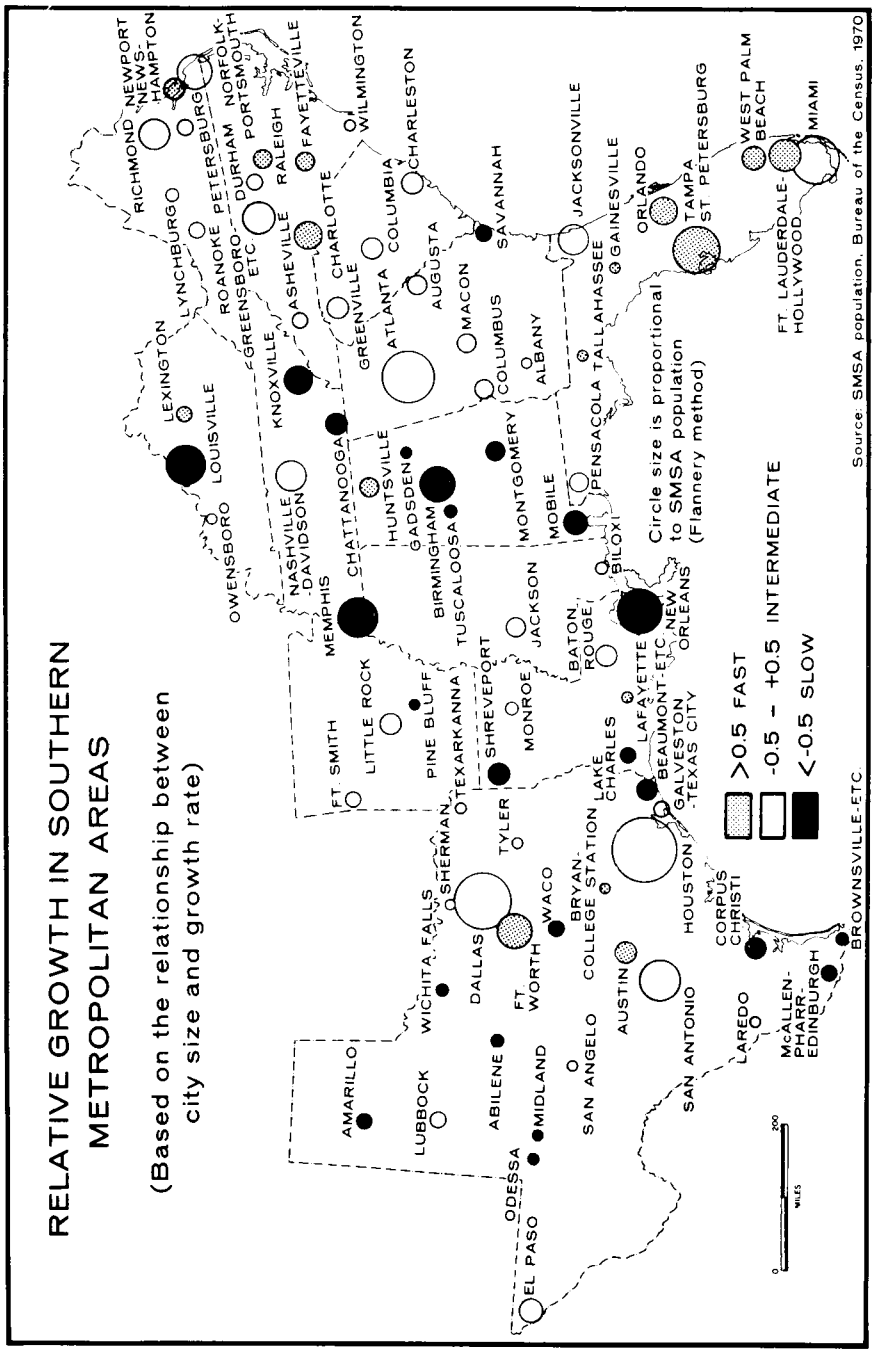
RELATIVE GROWTH IN SOUTHERN METROPOLITAN AREAS
(Based on the relationship between city size and growth rate)
RICHMOND
NEWPORT NEWS-HAMPTON
NORFOLK-PORTSMOUTH
LYNCHBURG
ROANOKE
PETERSBURG
DURHAM
RALEIGH
FAYETTEVILLE
GREENSBORO ETC
ASHEVILLE
CHARLOTTE
WILMINGTON
LEXINGTON
LOUISVILLE
KNOXVILLE
GREENVILLE
ATLANTA
COLUMBIA
CHARLESTON
AUGUSTA
OWENSBORO
NASHVILLE-DAVIDSON
MEMPHIS
CHATTANOOGA
HUNTSVILLE
GADSDEN
BIRMINGHAM
TUSCALOOSA
MACON
SAVANNAH
COLUMBUS
MONTGOMERY
ALBANY
JACKSONVILLE
MOBILE
PENSACOLA
TALLAHASSEE
GAINESVILLE
ORLANDO
TAMPA
ST PETERSBURG
WEST PALM BEACH
FT. LAUDERDALE-HOLLYWOOD
MIAMI
FT. SMITH
LITTLE ROCK
PINE BLUFF
TEXARKANA
SHREVEPORT
MONROE
JACKSON
BATON ROUGE
BILOXI
NEW ORLEANS
LAFAYETTE
LAKE CHARLES
BEAUMONT-ETC
GALVESTON-TEXAS CITY
HOUSTON
SHERMAN
TYLER
DALLAS
WICHITA FALLS
WACO
BRYAN-COLLEGE STATION
AUSTIN
CORPUS CHRISTI
SAN ANTONIO
LAREDO
McALLEN-PHARR-EDINBURGH
BROWNSVILLE-ETC
AMARILLO
LUBBOCK
ABILENE
MIDLAND
ODESSA
EL PASO
SAN ANGELO
Circle size is proportional to SMSA population (Flannery method)
>0.5 FAST
-0.5 - +0.5 INTERMEDIATE
<-0.5 SLOW
0
200
MILES
Source: SMSA population, Bureau of the Census, 1970

Figure 2

greater than expected rates were either in Florida or Texas or were associated with service and distribution activities—Miami, Dallas, Atlanta, and Charlotte, for example. Multiple correlation analysis using city size for the 1960 and 1970 censal periods as the independent variables measured against the ten year growth rate gave a multiple correlation coefficient of .764. When the 1960 SMSA populations were held constant, the association between growth rate and 1970 urban population size was strong and yielded a partial correlation coefficient (r_p) of .716 (Table 1).

What does all this mean? The economies associated with secondary economic activities and industrialization familiar to students of early 19th and 20th century North American cities no longer determine the main patterns of urban growth, and recent city growth in the South is a good place to observe this. *(11)* New economies tied to the distribution of goods, research and education, and other service functions whose locations are much more susceptible to change and movement, now tend to influence and promote growth in cities; and these so-called "foot-loose" activities appear to be attracted to certain kinds of environmental amenities (Figure 3). *(12)* The valued amenities are not commonly associated with traditional market-oriented locations in large industrial centers in the U. S. manufacturing belt. Rather, they are found increasingly in the South and Southwest, although not exclusively. Indeed, one such strongly desired amenity may be a mild winter climate with a long warm season. These seasonal characteristics permit much greater recreational opportunities than in the North and also cut the time and cost of goods movement in the winter season.

Another frequently sought amenity is a suburban or ex-urban highway oriented location and the availability of large, low-cost sites for construction. The abundance of small cities and rural areas in much of the South may generate a perception of the region as one possessing just those attributes so attractive to many "foot-loose" economic activities and industries. *(13)* If this is the case, it would appear to be a reversal of what has long been viewed as a negative aspect of the agrarian South—poor people, schools and rural environments. *(14)* At the same time low cost labor continues to attract traditionally labor-oriented industries such as textiles, apparel, shoes, electronics and machine assembly, and furniture, and some of these industries search for small town, rather than city, locations. *(15)* Indeed, the low cost labor requirements of such industries promote a location where labor is less likely to be skilled, expensive, and unionized, i.e., outside of large urban areas. *(16)*

RECENT METROPOLITAN GROWTH IN THE SOUTH. In the decade of the sixties, most metropolitan areas in the South grew, and some of them grew at very rapid rates. The greatest growth occurred in Florida and Texas. By 1970, six of the South's ten largest metropolitan areas were located in these two states, and five of these six grew dra-

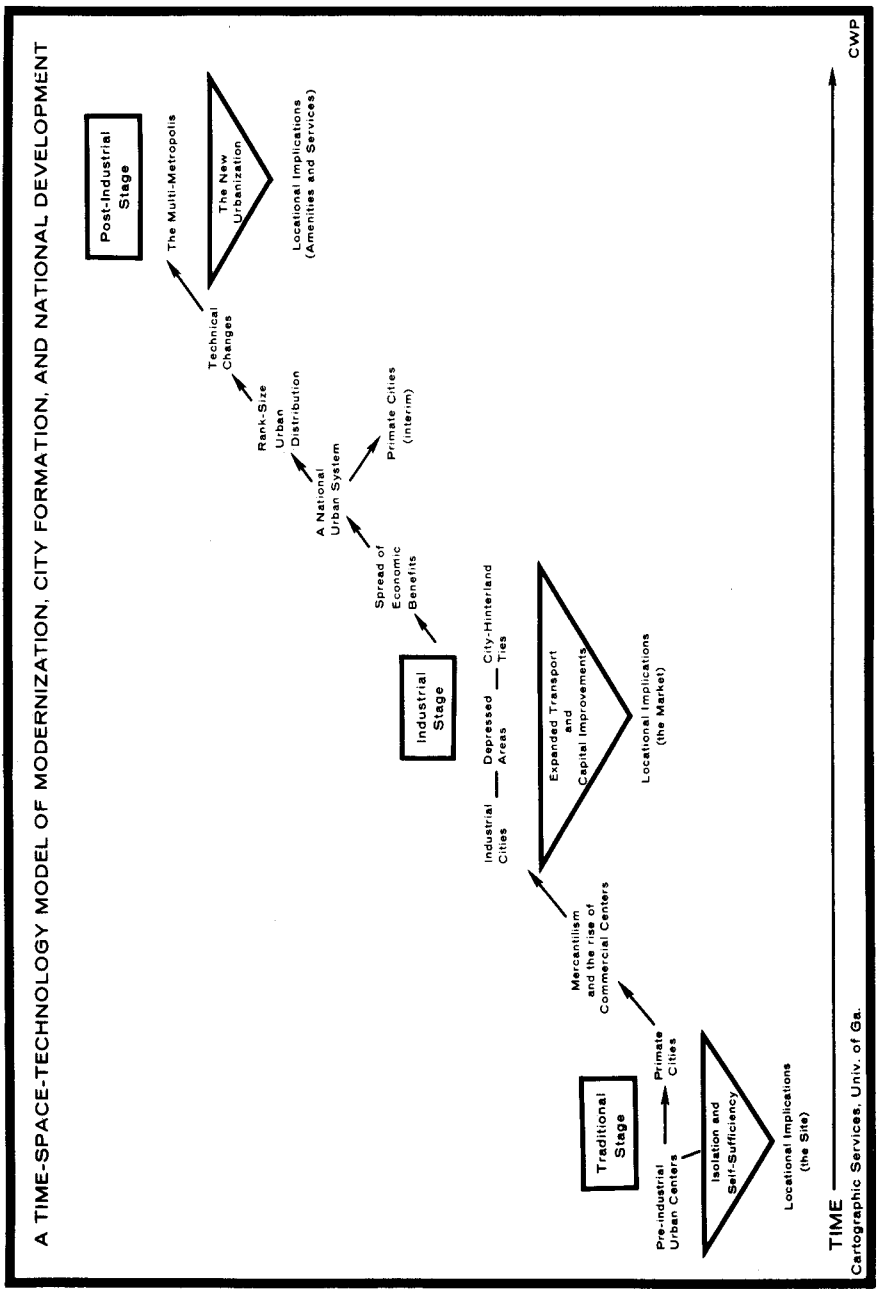
A TIME-SPACE-TECHNOLOGY MODEL OF MODERNIZATION, CITY FORMATION, AND NATIONAL DEVELOPMENT
Post-Industrial Stage
The Multi-Metropolis
The New Urbanization
Technical Changes
Rank-Size Urban Distribution
Locational Implications (Amenities and Services)
A National Urban System
Primate Cities (interim)
Spread of Economic Benefits
Industrial Stage
Industrial Cities — Depressed Areas — City-Hinterland Ties
Expanded Transport and Capital Improvements
Locational Implications (the Market)
Mercantilism and the rise of Commercial Centers
Traditional Stage
Pre-industrial Urban Centers
Primate Cities
Isolation and Self-Sufficiency
Locational Implications (the Site)
TIME
CWP
Cartographic Services, Univ. of Ga.

Figure 3

matically. Fourteen of the 40 largest SMSAs, and more than 40 percent of all southern SMSAs, were in these two states. Texas has both large cities and small ones; nearly half of the southern SMSAs with fewer than 200,000 inhabitants were in Texas. Yet a curious pattern has emerged in Texas. The large urban areas in the state are growing rapidly, but most of the smaller SMSAs, those less than one quarter million, appear to have stagnated during the 1960s. It has been theorized that race and ethnicity may be critical elements in such growth patterns. The low income groups, Mexican-Americans and blacks, are highly mobile and likely to migrate in search of better jobs and opportunities. Inasmuch as these groups comprise large segments of the populations of many of the smaller Texas SMSAs, their migration in search of a better life in the big cities may help account for the pattern of slow growth in the smaller cities. *(17)*

Many other southern cities and their environs also grew rapidly and for a variety of reasons. Among the South's larger metropolitan areas, Atlanta, New Orleans, Norfolk-Portsmouth, Richmond, Charlotte, Charleston, and Greensboro-High Point-Winston-Salem, all grew more than 13 percent during the decade, and some smaller city areas throughout the region grew at spectacular rates. Among the most rapidly growing were Austin, Raleigh, Lexington, Baton Rouge, Huntsville, Fayetteville, Gainesville, Tallahassee, and Lafayette. Factors that account for growth were varied. For example, federal support in military and space associated functions was important in Houston, Huntsville, Norfolk, Fayetteville, Ft. Worth, Orlando, and Charleston. *(18)* In other cases, growth associated with some particular function, industry, or resource may have been extremely rapid. Tourist and amenity-oriented growth in Florida cities are good illustrations. Such growth was more conspicuous in smaller cities where one event or function can provide a profound impact. Most significant, however, was the growth of the larger centers.

Based on growth rates, it appears that new arrivals to the urban South seek out large cities and metropolitan areas. This would seem to coincide with the proposal that the critical causal feature of urban growth in the region is technological change. The city forming activities are increasingly distribution or service activities, and manufacturing and industrial activities are less important. Large metropolitan areas are preferred as regional service headquarters or distribution centers, especially areas which are served by an excellent transport network, such as Atlanta, Charlotte, or Dallas. By contrast, the smaller cities, without the same "pull" on service activities, also must vie vigorously with each other for industry and are likely to offer a number of incentives. Again, however, there is some evidence that such industrial enterprises play only a modest role in contemporary city growth. *(19)* Commuting studies of small cities in the South suggest that small city industries rely largely on commuters rather than migrants. Large industries that migrate to

the South appear to be attracted to urban places large enough to offer amenities and services not as likely to be found in smaller towns. These industries also depend heavily on adjacent rural populations who function as urbanites only to the extent that they work and shop frequently in the cities. The residences of this labor force, however, are rural and are often associated with marginal and part-time farming. *(20)*

REGIONAL INTEGRATION OF THE URBAN SYSTEM. Despite the apparently dramatic growth of a few large cities concentrated in several of the southern states, the rank ordering of southern cities over the last two decades suggests more balanced growth among these cities. Such a pattern supports the thesis that the systemic growth of southern cities reflects a normal adjustment as the region proceeds along the development continuum associated with national growth patterns. There is little evidence of over or under concentration of economic growth benefits in the South, despite the presence of less prosperous or depressed regions located beyond the ambient influence of the region's cities. Indeed, in Berry's terms, the present decade will witness continued expansion of large urban "fields" defined by the expanding commuting radii of the region's major metropolises. *(21)* Using this definition, virtually no place in the South will remain isolated from the commuting field of some city, and the South will take its place within an evolving national urban system. Such a pattern is predicted in the speculative time-space-technology diagram (Figure 3).

Some forecasters have excluded the South from future American conurbations. *(22)* Yet such projections are based on a narrow range of past indicators and are interesting more as fanciful speculations about man's future than as predictions of reality. Moreover, contrary speculation exists. By the year 2000, some observers argue, vast urban regions will characterize the South in the same manner as those predicted for other regions in the country, such as Boston-Washington, Chicago-Pittsburgh, or San Francisco-San Diego. *(23)* The southern conurbations are likely to still be relatively small by the end of the century, but this is a reflection of their recency more than anything else. The South is sharing in the national tendency for growth and especially city growth. If the past ten or twenty years are any guide to the future, growth will not only be rapid, but it also will be balanced spatially among southern regions and cities. The patterns suggested in Figure 3 denote the evolution of a rank-size urban distribution as one step toward a new urbanization. Growth and change in the South, it is predicted, will lead to the emergence of a new urbanization in this region.

SUMMARY AND CONCLUSIONS. Urban growth patterns in the South suggest an even diffusion of economic benefits throughout the region. If this is an accurate appraisal, systemic evolution of southern cities will support theories that postulate a hierarchical growth of a system of cities in the economic development of the region. That is, a rank-sized systemic

ordering of urban centers would be expected as opposed to a primate city-size distribution (Figure 1).

Perhaps the most significant element in southern urban growth is that suggested by Borchert and Brunn. *(24)* Technologies are changing, and the southern region, so long lagging behind national growth patterns, is now being included. In the 19th and early 20th centuries, city growth was based largely on industrial location and proximity to large consuming markets. The mid-20th century ushered in a new era—a post industrial age in which the technic *cum* service function is the salient growth determinant (Figure 3). This new stage of city formation embraces a locational variable that stresses amenity values—values that a Pittsburgh, Cleveland, or Lowell sorely lack when compared with Miami, San Antonio, or Augusta. It is this amenity factor, coupled with a number of secondary features such as lower labor cost, lower taxes, cheaper power, and cheaper housing, that is attractive to current growth activities. Thus, while the last century has been, to some extent, one of poverty and anguish for the South, new growth patterns appear to augur well for a broader dissemination of national wealth throughout the southern region.

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(1) Here, the South is taken to include the 12 states from Texas in the west to Kentucky and Virginia in the north and east and Florida in the south.

(2) This change was summarized, for example, by Howard A. Schretter "Dimensions of Southern Urbanization," paper presented at the 23rd annual meeting of the Southeastern Division, Association of American Geographers, Nov. 26, 1968, Greenville, N. C. See also Rupert B. Vance and Nicholas J. Demerath, (eds.), *The Urban South*, University of North Carolina Press, Chapel Hill, 1954.

(3) A good background discussion of the theoretical aspects of this question can be reviewed in Brian J. L. Berry, "City Size and Economic Development: Conceptual Synthesis and Policy Problems with Special Reference to South and Southeast Asia," in Leo Jakobson and Ved Prakash, (eds.), *Urbanization and National Development*, Sage Publication, Beverly Hills, 1971, pp. 111-155.

(4) *Ibid.* See also Niles M. Hansen, *Intermediate-Size Cities as Growth Centers*, Praeger, New York, 1971.

(5) Hartshorn, Truman, "The Spatial Structure of Socio-Economic Development in the Southeast, 1950-1960," *Geographical Review*, Vol. 61, April, 1971, pp. 265-283.

(6) Berry, *op. cit.*

(7) See George K. Zipf, *National Unity and Disunity*, Principia Press, Bloomington, Ind., 1941.

(8) See Mark Jefferson, "The Law of the Primate City," *Geographical Review*, Vol. 28, April, 1939, pp. 226-232.

(9) Hansen, *op. cit.*

(10) In all cases in this study the Standard Metropolitan Statistical Area (SMSA) or its earlier equivalent is used. Thus, when cities are discussed, the reference is to their metropolitan area populations and is not limited to central cities. For an elaboration of the idea of self-generating growth in urban metropolitan areas, see Wilbur Thompson, "Urban Economic Growth and Development in a National System of Cities," in Philip M. Hauser and Leo F. Schnore, (eds.), *The Study of Urbanization*, John Wiley, New York, 1965, pp. 431-490.

(11) See, for example, Stanley D. Brunn, "The New Urbanization: Emerging Patterns in the South and Southwest," paper presented at the 68th annual meeting of the Association of American Geographers, April, 1972, Kansas City. An earlier statement that details this process in its historical context is contained in John R. Borchert, "American Metropolitan Evolution," *Geographical Review*, Vol. 57, July, 1967, pp. 301-332. See also Allan R. Pred, *The Spatial Dynamics of U. S. Urban-Industrial Growth 1800-1914*, M.I.T. Press, Cambridge, Mass., 1966.

(12) Brunn, *op. cit.* See also Brian J. L. Berry, "The Geography of the United States in the year 2000," *Ekistics*, Vol. 29, May, 1970, pp. 339-351.

(13) See, for example, C. R. Hayes and N. W. Schul, "Why do Manufacturers Locate in the Southern Piedmont?" *Land Economics*, Vol. 44, February, 1968, pp. 117-121; and Alfred W. Stuart, "Metrolina: A Southern Dispersed Urban Region," *Southeastern Geographer*, Vol. 12, November, 1972, pp. 101-120.

(14) This assertion, which might be viewed as the conventional wisdom pre-1970, is most lucidly summarized by Richard E. Lonsdale, "Barriers to Rural Industriali-

zation in the South," *Proceedings*, the Association of American Geographers, Vol. 1, 1969, pp. 84-88. No argument is intended with Lonsdale. The thesis here asserts that new technologies closely tied in with improved transportation have bypassed the old patterns and yielded a new trend of economic and urban growth. The pre-1970 conventional wisdom on rural industrialization in the South is not debated here.

(15) Hayes and Schul, *op. cit.*

(16) Lineback, Neal G., "Low-Wage Industrialization and Town Size in Rural Appalachia," *Southeastern Geographer*, Vol. 12, May, 1972, pp. 1-13. A somewhat contrasting viewpoint is presented by Lonsdale, *op. cit.*

(17) Such a pattern was suggested by Clyde Browning, Personal Communication, November 19, 1973. It was supported, in part, by a review of 1970 census statistics on the ethnic composition of smaller Texas SMSAs.

(18) This is well documented on a state level in Clyde E. Browning, "Uncle Sam in the South: Federal Outlays to Southern States," *Southeastern Geographer*, Vol. 11, April, 1971, pp. 62-69. Changes in the territory of an SMSA through the addition of adjacent counties also can have a very dramatic effect on the statistics used to measure growth.

(19) Schretter, Howard A., "New Jobs Equal Local Economic Growth: It Ain't Necessarily So," paper presented at the 25th annual meeting of the Southeastern Division, Association of American Geographers, Nov. 24, 1970, Columbia, S. C. The evidence on this entire matter, however, is contradictory. A good theoretical discussion of the role of rural commuting to industrial jobs is provided by James O. Wheeler, "Commuting and the Rural Non-farm Population," *The Professional Geographer*, Vol. 23, April, 1971, pp. 118-122.

(20) See James S. Fisher, "Commuting and Rural Nonfarm Population of Northeast Georgia," paper presented at the 28th annual meeting of the Southeastern Division, Association of American Geographers, November 19, 1973, Boone, N. C. Earlier studies that corroborate such a trend are Richard E. Lonsdale, "Two North Carolina Commuting Problems," *Economic Geography*, Vol. 42, April, 1966, pp. 114-138; and Roger W. White, "The Wage Rate and Commuting Patterns in a Rural Manufacturing Labor Force," *Southeastern Geographer*, Vol. 12, May, 1972, pp. 34-44.

(21) Among others, see Brian J. L. Berry, Peter G. Goheen, and Harold Goldstein, *Metropolitan Area Definition: A Re-evaluation of Concept of Statistical Practice*, U. S. Government Printing Office, U. S. Bureau of the Census Working Paper, Washington, D. C., 1968; and Berry, "The Geography of the U. S. in the year 2000," *op. cit.*

(22) For example, Herman Kahn and Anthony J. Weiner, "The Next Thirty-three Years: A Framework for Speculation," *Daedalus*, Vol. 96, 1967, pp. 705-732.

(23) Schretter, "Dimensions of Southern Urbanization," *op. cit.*, is but one example.

(24) Brunn, *op. cit.*, and Borchert, *op. cit.*, among others.